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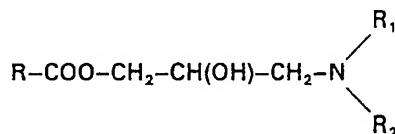
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(57) The composition comprises as effective component a compound of formula:

1



where R is an alkyl or alkenyl group with 7 to 17 carbon atoms in a linear or branched main chain, R₁ is 2-hydroxyethyl, 3-hydroxy-1-propyl, 1-hydroxy-2-propyl, 2-hydroxy-1-propyl, 1-hydroxy-2-butyl, 1-hydroxy-3-butyl, 1-hydroxy-4-butyl, 2-hydroxy-3-butyl, and R₂ = R₁ or R-COO-CH₂-CH(OH)-CH₂, where R has the above meaning, or hydrogen, in the amount of 0.02 to 50 volume percent related to the total

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SPECIFICATION

Cosmetic preparations

5 The invention pertains to cosmetic preparations with enhanced utility properties, as for example hair water for easier combing, hair shampoo with setting effects, skin milk and emulsion with softening and moisturizing effects, bath foam with the enhanced foam stability, and the like. 5

A large number of cosmetic preparations of kinds mentioned above is known which, in addition to their basic function (e.g. washing and foaming effect, softening effect), exhibit 10 further desirable effects, as e.g. moisturizing, setting, stabilizing, and antistatic effects, which are generally attained by addition of specific compounds. These specific compounds, which are recently used in cosmetic preparations, all have an ionogenic character. Typical representatives are quaternary ammonium salts containing a hydrophilic part and a hydrophobic part in the molecule. These compounds are functionally very effective, but their substantial disadvantage 15 consists in the fact that they irritate eyes and skin in higher concentrations and that they do not meet so called fish test, i.e. they are ecologically harmful. 15

In addition, numerous compounds of this type react with anionactive components of cosmetic preparations and thus their concentration has to be kept relatively high to save their efficiency. This unsuitable property is given by the presence of quaternary nitrogen atom and the necessary 20 counterion (mostly halide). 20

The above fact is the cause of difficult preparation, e.g. of a hair shampoo with favourable antistatic effects, by procedures known till now.

The said compounds are recently replaced by compounds of nonionogenic character, i.e. by the compounds which do not contain any charge in their molecule, but the desirable additional 25 effects are generally lower with the latter compounds. For cosmetic purposes they are used e.g. ethoxylated fatty alcohols and fatty acids, amides and hydroxyalkylamides of higher fatty acids, hydroxylated aminoalkyl esters of fatty acids, some fatty acids derivatives containing heterocyclic nuclei, and the like. 25

The object of this invention are cosmetic preparations with enhanced utility properties, as for 30 example, hair water for easier combing, hair shampoo with setting effects, skin milk and emulsion with softening and moisturizing effects, bath foam with the enhanced foam stability, which contain the effective component of general formula I 30



40 where R is alkyl or alkenyl with 7 to 17 carbon atoms in a linear or branched main chain, R₁ is 2-hydroxyethyl, 3-hydroxy-1-propyl, 1-hydroxy-2-propyl, 2-hydroxy-1-propyl, 1-hydroxy-2-butyl, 1-hydroxy-3-butyl, 1-hydroxy-4-butyl, or 2-hydroxy-3-butyl, and R₂ is R₁ or R-COO-CH₂-CH(OH)-CH₂, where R has the above given meaning, or hydrogen, in the amount of 0.02–50% volume percent related to the total volume of the final preparation. 40

45 Thus, 2 to 25 vol.% of the compound of general formula I is advantageously used for hair shampoo, 1 to 10 vol.% for skin milk, 0.05 to 3 vol.% for hair water, and 0.1 to 0.15 vol.% for bath foam. 45

The compound of general formula I may be employed in all cosmetic applications and, regarding the character of hydrophobic end of the molecule, it is suitable in particular in the 50 preparation of skin milks and creams and hair waters, where its good applicability to skin and hair is of use, while the sufficient water wettability is preserved. 50

The effective compound of the general formula I acts in the way, that it does not obstruct moisture to penetrate through it into skin and form there the needed equilibrium. At the same time, it forms or assists in formation of a protective film of fatty character on skin, which 55 protects skin from unfavourable effects of weather, particularly from drying by wind and sun radiation. This effect is assisted by a high degree of orientation of molecules of the compounds, having the above mentioned formula I, at the surface. Cosmetic preparations, containing the said compound, softens the skin in a short time and makes it smooth. A comfortable feeling of relaxation comes practically instantaneously after application. 55

60 It further turned out that the compounds of the general formula I makes easier formation of compositions of washing, setting and fatty components. Owing to the exceptionally high affinity of these compounds to hair, a very thin layer is firmly adsorbed at the hair surface which does not prevent from perfect washing and cannot be perceptibly rinsed even with several times higher water portions than are used in the common washing of hair. However, this very thin 65 layer is perfectly sufficient to prevent hair from fracture, which is caused by washing off a fat, 65

and to remove the feeling of dry hair and dry skin.

The fatty components can be strongly reduced in the formulae. The same holds also for setting agents.

In hair waters, the compounds of the general formula I exhibit already in an ultrathin, practically monomolecular layer on the hair surface a distinct effect influencing friction. This is caused by the high orientation degree of molecules at the hair surface. This fact is very important from the view of cosmetics, because the external unpleasant greasiness does not occur in the very thin well adsorbed layers on hair and skin. The comfortable feeling of skin relaxation is achieved even with such slight amounts. As it was observed in practice, hair can be easily combed and the final hair-dress is well fixed after drying. Although the cause of fixation cannot be exactly expressed, it may be truly assumed that a balanced combination of lubricating and molecular-adhesion effects is the matter. The compound satisfies the dermatological and ecological testing.

The invention is further illustrated in the Examples of performance, where all given percent have to be understood as volume percent.

Example 1—Skim milk

Composition:

20	Vaseline oil	7%	20
	Olive oil	7%	
	Cetaceum	3%	
	1% extracts of natural materials in ethanol or water	0.5%	
	Esters of p-oxybenzoic acid	0.2%	
25	Fragrant composition	0.4%	25
	Glycerol ester of stearic acid	6%	
	Compound of formula I, where R is a mixture of C ₁₀ –C ₁₇ alkyls, R ₁ = R ₂ = CH ₂ CH ₂ OH	3%	
	Distilled water	up to 100%	
30			30

The skin milk according to the example was prepared by blending the compound of formula I in the mixture of vaseline oil with water and then other components are blended into the mixture in the common way.

35 Example 2—Hand cream 35
Hand cream was prepared by the procedure analogous to Example 1.

Composition:

	Vaseline oil	9%	
40	Sunflower oil	7%	40
	Silicon oil	1.5%	
	Glycerol	6%	
	Cetyl alcohol	3%	
	1% extracts of natural materials in ethanol or water	0.5%	
45	Esters of p-oxybenzoic acid	0.2%	45
	Odorants	0.3%	
	Glycerol ester of stearic acid	7%	
	Compound of formula 1, where R is a mixture of C ₁₀ –C ₁₇ alkyls, R ₁ = H, R ₂ = CH ₂ CH ₂ OH	5%	
50	Distilled water	up to 100%	50

Example 3—Skin creams

Skin creams were prepared by the procedure analogous to Example 1.

Composition:		Fat	Semifat	
	Vaseline oil	17%	7%	
	Vegetable oil	12%	7%	
5	White vaseline	12%	5%	5
	Beeswax	10%	3%	
	Isopropyl myristate	3%	2%	
	Cetyl alcohol	2.5%	1.5%	
	1% extracts of natural materials			
10	in ethanol or water	2%	2%	10
	Esters of p-oxybenzoic acid	0.2%	0.2%	
	Odorants	0.5%	0.5%	
	Glycerol ester of stearic acid	12%	8%	
	Compounds of formula I, where R is			
15	n-C ₉ H ₁₉ , R ₁ = R ₂ CH ₂ CH ₂ OH	4%	3%	15
	Distilled water	up to 100%	up to 100%	

Example 4—Balm for feet

20	Composition:			20
	Vaseline oil		6%	
	Vegetable oil		7%	
	Silicon oil		2.5%	
	White vaseline		7%	
25	Beeswax		3%	25
	Cetaceum		8%	
	Glycerol		4%	
	Odorants		0.5%	
	Glycerol ester of stearic acid		12%	
30	Compound of the formula I, where R is a mixture of			30
	C ₁₀ -C ₁₇ alkyls, R ₁ = H, R ₂ is 1-hydroxy-1-butyl		5%	
	Distilled water		up to 100%	

The balm for feet was prepared by blending the compound of formula I in the mixture of
 35 vaseline oil with water and this mixture was blended into the mixture of other components. 35

Example 5—Skin milk

The composition was the same as in Example 1, with the distinction that the compound of
 formula I, where R is a mixture of C₁₅-C₁₇ alkyls, R₁ = (CH₂)₃OH, and R₂ = R-COO-CH₂-
 40 CH(OH)-CH₂, was used instead of the compound of formula I mentioned in Example 1. 40

Examples 1 to 5 rendered cosmetic preparations which gave a very comfortable feeling of
 smooth skin caused by the formation of a protective film, kept and regenerated very efficiently
 the water content in skin which was manifested in skin softness. The given preparations acted
 practically instantaneously after application in very refreshing manner.

45 45

Example 6—Hair water

The hair water was prepared by dissolution the compound of formula I in ethanol and
 blending the solution into the mixture of other components in the usual way.

50	Composition:			50
	Refined ethanol, pure 96.4%		16%	
	Distilled water		65%	
	1% extracts of plants in ethanol or water		15%	
	Esters of p-oxybenzoic acid		0.2%	
55	Standard solution of vitamine F in ethanol or fat		1.5%	55
	Buffer—a mixture of succinic acid salts and			
	sodium succinate		1.5%	
	Food dyestuffs, 5% ethanolic solution		0.1%	
	Odorants		0.6%	
60	Compound of formula I, where R is a mixture of			60
	C ₁₀ -C ₁₇ alkyls, R ₁ = R ₂ = CH ₂ CH ₂ OH		0.1%	

The hair water, being applied in the usual manner after hair washing, caused very easy
 combing and setting of a hair-dress; a comfortable relaxation of head skin was felt. The external
 65 greasing of hair was not manifested in any way. 65

Example 7—Hair water

The compound of formula I was dissolved in ethanol and blended into the mixture of other components in the usual way.

5	Composition:		5
	Refined ethanol, pure 96.4%	34%	
	Glycerol	1.3%	
	Distilled water	54%	
10	Birch juice	7.5%	10
	Esters of p-oxybenzoic acid	0.2%	
	Buffer—a mixture of succinic salts and sodium succinate	2%	
	5% ethanolic solution of food dyestuffs	0.1%	
15	Odorants	0.7%	15
	Compound of the formula I, where R is a mixture of C ₁₀ –C ₁₇ alkyls, R ₁ = H, R ₂ = CH ₂ CH ₂ OH	0.2%	

Similarly as in Example 6, the hair water according to Example 7, applied in a usual manner after hair washing, caused a very easy combing and setting of hair-dress and a comfortable relaxation of head skin was felt. The external greasing of hair was not manifested in any way.

Example 8—Hair water

The compound of formula I was dissolved in ethanol and blended into the mixture of other components in the usual way.

	Composition:		
	Refined ethanol, Pure 96.4%	40%	
	Glycerol	0.7%	
30	Distilled water	50%	30
	Esters of p-oxybenzoic acid	5%	
	Standard solution of vitamin F in ethanol or fat	1.4%	
	Resorcinol and its derivatives	1.3%	
	5% solution of food dyestuffs in ethanol	0.1%	
35	Odorants	1.2%	35
	Compound of formula I, where R is n-C ₁₁ H ₂₃ , R ₁ = R ₂ = CH ₂ CH ₂ OH	0.3%	

Similarly as in Example 6, the hair water according to Example 8, being applied in the usual manner after hair washing, caused very easy combing and hair-dress setting and a comfortable relaxation of head skin was felt. The external greasing of hair was not manifested in any way.

Example 9—Hair water

The hair water was prepared by dissolving the compound of formula I in ethanol and blending the solution into the mixture of other components in the usual way.

	Composition:		
	Refined ethanol, pure 96.4%	52%	
	Distilled water	30%	
50	1% extracts of plants in ethanol or water	6%	50
	Esters of p-oxybenzoic acid	0.2%	
	Standard solution of vitamin F in ethanol or fat	1.5%	
	Resorcinol and its derivatives	0.6%	
	25 wt.% ethanolic solution of camphor	0.4%	
55	Buffer—a mixture of salts of succinic acid and sodium succinate	1.5%	55
	5% solution of food dyestuffs in ethanol	0.1%	
	Odorants	0.7%	
60	Compound of formula I, where R is n-C ₁₃ H ₂₇ , R ₁ = H, R ₂ is 1-hydroxy-4-butyl	1.0%	60

Similarly as in Example 8, the hair water according to Example 9, being applied in the usual manner after hair washing, caused very easy combing and setting of hair-dress and a comfortable relaxation of head skin was felt. The external greasing of hair was not manifested in any way.

Example 10—Hair water

The hair water was prepared by dissolving the compound of formula I in ethanol and blending the solution into the mixture of other components.

5	Composition:		5
	Refined ethanol, pure 96.4%	70%	
	Glycerol	0.7%	
	Distilled water	17%	
10	1% extracts of plants in ethanol or water	6%	10
	Esters of p-oxybenzoic acid	1%	
	25 wt.% ethanolic solution of camphor or menthol	1%	
	Buffer—a mixture of succinic acid salts and sodium succinate	0.7%	
15	Odorants	1.2%	15
	Compound of formula I, where R is $n\text{-C}_9\text{S}_{19}$, $R_1 = R_2 = \text{CH}_2\text{CH}_2\text{OH}$	2.4%	

Similarly as in Example 6, the hair water according to Example 10, applied in the usual manner after washing of hair, caused a very easy combing and setting of hair-dress and a comfortable relaxation of head skin was felt. The external greasing of hair was not manifested in any way.

It was conformed that all components of the hair water were perfectly washed off in the next washing of hair.

25

Example 11—Hair water

The composition and preparation were similar as in Example 6, with the distinction that the compound of formula I, where R is $\text{CH}_3(\text{CH}_2)_7\text{CH}:\text{CH}(\text{CH}_2)_7$, $R_1 = (\text{CH}_2)\text{OH}$, and $R_2 = \text{RCOOCH}_2\text{CH}(\text{OH})\text{CH}_2$, where R is $\text{CH}_3(\text{CH}_2)_7\text{CH}:\text{CH}(\text{CH}_2)_7$, was used. The hair water being applied in the usual way after hair washing caused a very easy combing and setting of hair-dress and a comfortable relaxation of head skin was felt. The external greasing of hair was not manifested in any way.

Example 12—Hair shampoo

35	Composition:		35
	Sodium laurlysulphate or sodium laurylethersulphate	7%	
	Amides of C_{12} fatty acids	2.5%	
	Refined ethanol, pure 96.4%	3%	
40	1% extracts of plants in ethanol or water	2%	40
	Birch juice	3%	
	Esters of p-oxybenzoic acid	0.2%	
	5% ethanol solution of food dyestuffs	1%	
	Compound of formula I, where R is a mixture of $\text{C}_{10}\text{--C}_{17}$ alkyls, $R_1 = R_2 = \text{CH}_2\text{CH}_2\text{CH}$	3%	
45	Distilled water	up to 100%	45

The shampoo was prepared by dissolving the compound of formula I in ethanol and blending the solution into the mixture of other components in the common way. The shampoo formed a rich foam, had a very good washing effect, caused a strong setting of hair-dress and gave a comfortable feeling of head skin relaxation. The pick-up of dirt by hair was reduced.

Example 13—Hair shampoo

Composition:		
	Sodium laurylsulphate or sodium laurylethersulphate	12%
	Refined ethanol, pure 96.4%	2%
5	1% extracts of plants in ethanol or water	3%
	Birch juice	6%
	Lecithin	1%
	Esters of p-oxybenzoic acid	0.2%
	5% ethanolic solution of food dyestuffs	1%
10	Compound of formula I, where R is a mixture of C ₁₀ -C ₁₇ alkyls, R ₁ = H, R ₂ = CH ₂ CH ₂ OH	10%
	Distilled water	up to 100%

15 The compound of formula I was dissolved in ethanol and then the solution was blended into a mixture of other components in the usual way. The shampoo formed a rich foam, had a very good washing effect, and gave a good setting of hair-dress and a comfortable feeling of head skin relaxation. The pick-up of dirt by hair was reduced.

20 Example 14—Hair shampoo

Composition		
	Sodium laurylsulphate or sodium laurylethersulphate	17%
	Amides of fatty acids C ₁₂	3%
	Lecithin	3%
25	Refined ethanol, pure 96.4%	3%
	Standard solution of vitamin F in ethanol or fat	2%
	1% extracts of plants in ethanol or water	7%
	Birch juice	5%
	Esters of p-oxybenzoic acid	0.3%
30	Food dyestuffs, 5% ethanolic solution	1%
	Compound of formula I, where R = CH ₃ (CH ₂) ₁₀ , R ₁ = R ₂ = CH ₂ CH ₂ OH	13%
	Distilled water	up to 100%

35 The compound of formula I was dissolved in ethanol and the solution was then blended with a mixture of other components in the usual way. The shampoo formed a rich foam, had a very good washing effect and gave good setting of hair-dress and a comfortable feeling of head skin relaxation. The pick-up of dirt by hair was expressively reduced.

40 Example 15—Hair shampoo

Composition:		
	Sodium laurylsulphate or sodium laurylethersulphate	20%
	Amides of C ₁₂ fatty acids	6%
45	Lecithin	4%
	Refined ethanol, pure 96.4%	5%
	Standard solution of vitamin F in ethanol or fat	2%
	1% extracts of plants in ethanol or water	10%
	Birch juice	7%
50	Gelatin	1%
	Esters of p-oxybenzoic acid	0.2%
	Food dyestuffs, 5% solution in ethanol	1%
	Compound of formula I, where R = CH ₃ (CH ₂) ₁₂ , R ₁ = R, R ₂ = 1-hydroxy-4-butyl	18%
55	Distilled water	up to 100%

The compound of formula I was dissolved in ethanol and then the solution was blended into a mixture of other components in the usual way. The shampoo formed a rich foam, had an excellent washing effect and gave a good setting of hair-dress and a comfortable feeling of skin relaxation. The pick-up of dirt by hair was reduced.

60 Addition of the compound of formula I caused the increase of viscosity of the shampoo. At the content higher than 15%, a pasty product is formed with a very good solubility in warm water. Foam stabilizers were entirely omitted in the formula.

65 Example 16—Hair shampoo

The composition and preparation procedure were the same as in Example 12, with the distinction that the compound of formula I, where $R = CH_3(CH_2)_{11}$, $R_1 = CH_2CH_2OH$, and $R_2 = RCOOCH_2CH(OH)CH_2$, where R has the above said meaning, was used. The shampoo formed a rich foam, had a very good washing effect and gave a good setting of hair-dress and a comfortable feeling of head skin relaxation. The pick-up of dirt by hair was reduced.

Example 17—Bath foam

Composition:		
10 Sodium laurylsulphate or sodium laurylethersulphate	22%	10
Amides of C_{12} fatty acids	12%	
Foam stabilizer	15%	
1% extracts of plants in ethanol or water	15%	
5% ethanolic solution of food dyestuffs	3%	
15 Odorants	2%	15
Compound of formula I, where R is a mixture of		
C_{10} - C_{17} alkyls, $R_1 = R_2 = CH_2CH_2OH$	20%	
Distilled water	up to 100%	
20 The preparation was manufactured by blending the compound of formula I into water with		20
5% of sodium laurylsulphate or sodium laurylethersulphate, and then other components of the		
mixture and the rest of laurylsulphate were added in the usual way. This example represents		
generally the addition of the compound of formula I into an existing formula. The stability of		
foam and the feeling of skin relaxation and smoothness improved. The standard test of foam		
25 stability (shaking in a glass cylinder) gave by 30% higher values than the common bath foams.		25

Example 18—Bath foam

Sodium laurylsulphate or sodium laurylethersulphate			12%	
30 5% ethanolic solution of food dyestuffs			1%	30
Odorants			1%	
1% extracts of plants in ethanol or water			7%	
Compound of formula I, where $R = CH_3(CH_2)_{10}$				
$R_1 = R_2 = CH_2CH_2OH$			15%	
35 Distilled water			up to 100%	35

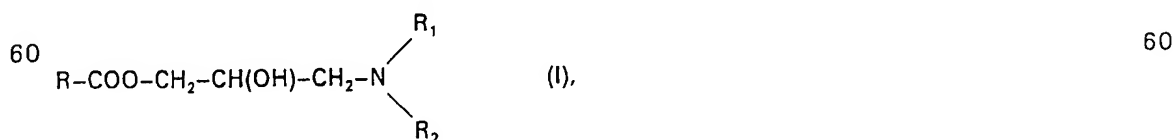
The preparation according to Example 18 was manufactured by blending the compound of formula I into water with 5% of sodium laurylsulphate or sodium laurylethersulphate, then other components of the mixture and the rest of laurylsulphate were added by mixing. The foam stabilizers and foaming agent were completely omitted in this example, while the foam obtained was of a very good quality and stability. Though the content of surfactant was decreased in comparison to Example 17, an excellent washing effect was achieved. The feeling of freshness, relaxation and smoothness of skin was very good. The viscosity of preparation was increased and an advantageous pasty consistence at very good solubility in warm bath was achieved at the concentrations above 15%. The standard test of foam stability (shaking in a glass cylinder) gave by 30% higher value than the common bath foams.

Example 19—Bath foam

The composition and preparation procedure were the same as in Example 17 with the distinction that the compound of formula I, where R is $CH_3(CH_2)_{12}$, R_1 is $CH_2CH(OH)CH_3$, and R_2 is $RCOOCH_2CH(OH)CH_2$, where R is $CH_3(CH_2)_{12}$. The foam stability and the feeling of relaxation and smoothness of skin were enhanced. The standard test of foam stability (shaking in a glass cylinder) gave by 30% higher value than the common bath foams.

55 CLAIMS

1. Cosmetic preparations characterized by the presence of an effective component, wherein the effective component is the compound of general formula I



65 where R is alkyl or alkenyl with 7 to 17 carbon atoms in a linear or branched main chain,

R₁ is 2-hydroxyethyl, 3-hydroxy-1-propyl, 1-hydroxy-2-propyl, 2-hydroxy-1-propyl, 1-hydroxy-2-butyl, 1-hydroxy-3-butyl, 1-hydroxy-4-butyl, 2-hydroxy-3-butyl, and

R₂ is R₁ of the above given meaning or R-COOCH₂CH(OH)CH₂, where R has the above given meaning, or hydrogen, in the amount of 0.02 to 50 volume percent related to the total volume of the final preparation.

2. Cosmetic preparations substantially as described with reference to any of the Examples herein.

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